**Mathematics on the Internet**

Read the following article about how Reddit ranks its posts:

<http://scienceblogs.com/builtonfacts/2013/01/16/the-mathematics-of-reddit-rankings-or-how-upvotes-are-time-travel/>

Summarize the article in your own words.

Analyze the statement that “upvotes are time travel.” What does the author mean by this? Consider three different posts: Post A is one day old and has net 10,000 upvotes, Post B is one that is three days old, and Post C has 5,000 upvotes. How many upvotes would Post B need to have the same ranking as Post A? How old would Post C need to be to have the same ranking as Post A?

How does Reddit’s algorithm value its two inputs – time and upvotes – differently? (look at the equation and talk about how the logarithm and the linear component affect rankings differently). Come up with a way that you could explain to someone who doesn’t understand logarithms how posts are ranked.

Then read this article about how Google’s PageRank works:

<http://www.whydomath.org/node/google/math.html>

Summarize the article. Explain how Google’s PageRank differs from previous search engines’ ranking systems, and how that changed search results.

Now it’s your turn. Choose a website that has to prioritize different postings or websites, such as a search engine, Reddit, a social networking site, or a news site. If you can figure out through research how that website ranks posts, explain it. Then, design three different algorithms that would provide different results when you go to the site. Explain the results that each of your algorithms would create. Predict which audiences each algorithm would be most popular with. You can change inputs; Reddit uses upvotes and time – you could use either of those, or something else entirely.

Summarize your project and reflect on your models.